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NUTRITIONAL PROBLEMS OF THE ELDERLY

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Unanswered questions in the nutrition of elderly people

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In recent times much interest has been aroused in the nutrition of elderly people and the question of malnutrition has been raised. Surveys are being conducted in the United Kingdom to try and find at least some of the answers. Present knowledge indicates that many older people eat less as they grow older, and McGandy, Burrows, Spanias, Meredith, Stone & Norris (1966), in a study of nutrient intakes and energy expenditure in men of different ages, found the total calorie requirements diminished with age in human subjects and that there is a disproportionate drop in fat intake with age: this may explain a decrease of 15 mg/100 ml in serum cholesterol between the ages of 50 and 70 years. This decrease in total calorie intake was accounted for by decrements in basal metabolism and in energy expended in physical activity. The next relevant fact was that lower levels of essential food substances have been found in certain groups of elderly individuals. Kataria, Rao & Curtis (1965) found vitamin C levels of elderly people living at home to be superior to that of those living in a hospital and a large welfare home. Andrews, Brook & Allen (1966) suggested that vitamin C-rich fruit and fruit juices be given routinely in institutional diets as they showed that the vitamin C status of elderly people resident in two hospitals and a large welfare home was significantly inferior to that of elderly people living at home or in a small welfare home.

Griffiths, Brocklehurst, Scott & Marks (1967) estimated levels of ascorbic acid and thiamine in normal young volunteers, in geriatric patients on hospital admission, and in elderly people in their own homes. No clinical studies were made and these levels cannot be correlated with clinical signs. On admission to hospital, 58% of the patients were deficient in ascorbic acid, 40% in thiamine, and of these 24% were deficient in both, as judged by the levels in younger volunteers. The levels in the elderly could be raised to those of younger volunteers with 3 weeks of vitamin supplementation, but on a normal hospital diet no such improvement was seen. Griffiths *et al.* found that the preparation of institutional diets requires to be closely supervised, but there appears to be no suggestion that these groups of people with low vitamin C levels were actually ill. Read, Gough, Pardoe & Nicholas (1965),

examining the entrants to an old people's home, found folic acid deficiency in forty (80%) of fifty-one patients examined. Six of these people were grossly anaemic, and analysis of this revealed anaemia due to iron deficiency following gastrectomy in two, to undiagnosed pernicious anaemia in two, to rheumatoid arthritis in one, and to folic acid deficiency in one.

Batata, Spray, Bolton, Higgins & Wollner (1967) studied the blood and bone marrow changes in one hundred consecutive patients, twenty-seven males and seventy-three females, between 60 and 90 years newly admitted to a geriatric department, with special reference to folic acid, vitamin B₁₂, iron and ascorbic acid, excluding those who had received antibiotics, chemotherapy or blood transfusion within 2 weeks before admission or folic acid, vitamin B₁₂, ascorbic acid or vitamin supplements within 1 month before admission. The patients presented with a wide range of diagnoses (one-third were anaemic, one-tenth had frank iron deficiency: normochromic anaemia was common). Despite the prevalence of low serum folic acid concentration and the general tendency for serum vitamin B₁₂ concentration to be reduced, no example of megaloblastic anaemia was found. Low blood ascorbic acid concentrations were common in the winter months but not sufficient to cause scurvy. The association with organic brain disease in the patients seen led to the suggestion that physical illness and disinterest in food were important factors. The part played by barbiturates was not clear, but it was considered that interest in food would be blunted by treatment with them. Loss of interest, difficulty in swallowing, immobility or poverty might in some cases mean that sufficient suitable food was not available. The most likely cause of the findings was reduced intake of food and malabsorption. Doubt was expressed about the wisdom of vitamin supplementation as the problem needs to be more clearly defined. These authors' findings did not suggest that the old person at home alone was more likely to be deficient in these elements than a person living with relatives. If physical disability and apathy and disinterest were more important than lack of availability of food, the provision of dietary supplements would be unlikely to solve the problem, for the supplement will be no more likely to be eaten than the food. Danger in supplementation existed if the recommended dose was exceeded and the authors felt that if folic acid was given to elderly people then parenteral vitamin B₁₂ was needed in addition.

Girdwood, Thomson & Williamson (1967) studied folic acid levels in old people in their own homes, those in hospital for more than 3 months and healthy middle-aged people. They found lower mean values of serum folate in the hospitalized old people and noted iron deficiency of a mild degree in elderly people at home (eleven women and one man). There seems, then, evidence that there may be low levels of vitamin C, of vitamin B₁₂, of folic acid, of iron and of thiamine, but in all surveys it is interesting to note that evidence of clinical malnutrition was not revealed. Exton-Smith & Stanton (1965), in their investigation of the diet, clinical condition and social circumstances of sixty women over the age of 70 years living alone in London, found some diets were ill-balanced and provided too little vitamin C, vitamin D, calcium, iron or protein and that a striking deterioration in health and nutrition was found in the late 70's. They made the recommendation that meals

designed for the elderly should contain a high proportion of protein with an adequate supply of calcium, iron and vitamin D, presented in such a way that the whole meal is eaten. The meals should be supplied three to four times a week and vitamin C might require to be provided separately as the food must be kept hot for long periods under meals-on-wheels service. These authors felt that further study was needed to elucidate the reasons for and the effects of the striking decrease in calorie and other nutrient intakes during the eighth decade. They considered that the exact need for vitamin D in adults was not yet assessed but that it was essential to determine this if skeletal rarefaction in old age was to be prevented by, for example, a larger vitamin D intake in earlier years. The importance of home helps for shopping, especially for the housebound and in times of bad weather, was stressed as was the use of small refrigerators and the great need for informed advice on budgeting and choosing nutritious meals.

Brockington & Lempert (1966) considered in their survey that the best protection against poor nutritional intake for those living alone was someone coming in each day to cook a meal. These problems are not simple and when taken with the findings of Strachan & Henderson (1965, 1967) that dementia may be found in patients with vitamin B₁₂ or folate deficiency, and the findings of Grant, Hoffbrand & Wells (1965) who found megaloblastic anaemia due to folic acid deficiency in patients with undiagnosed peripheral neuropathy and myelopathy, the importance of adding these nutrients to diet becomes realized.

The problems of malabsorption in elderly people have not been adequately studied. Certainly there is no doubt that partial gastrectomy is the commonest recognized cause of malabsorption of this group. It may be that owing to lack of scientific knowledge at the present time the clinician cannot be adequately trained to look for the early signs of malnutrition. There seems no doubt that gross malnutrition, such as flagrant scurvy or vitamin B₁ deficiency is not commonly found in elderly people, but there is considerable apprehension that minor degrees of deficiency disease exist and that there may in fact be a phase of subclinical malnutrition which may lead to poor health, apathy and disinterest and so commence a vicious circle in elderly people.

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